

Fig. 1

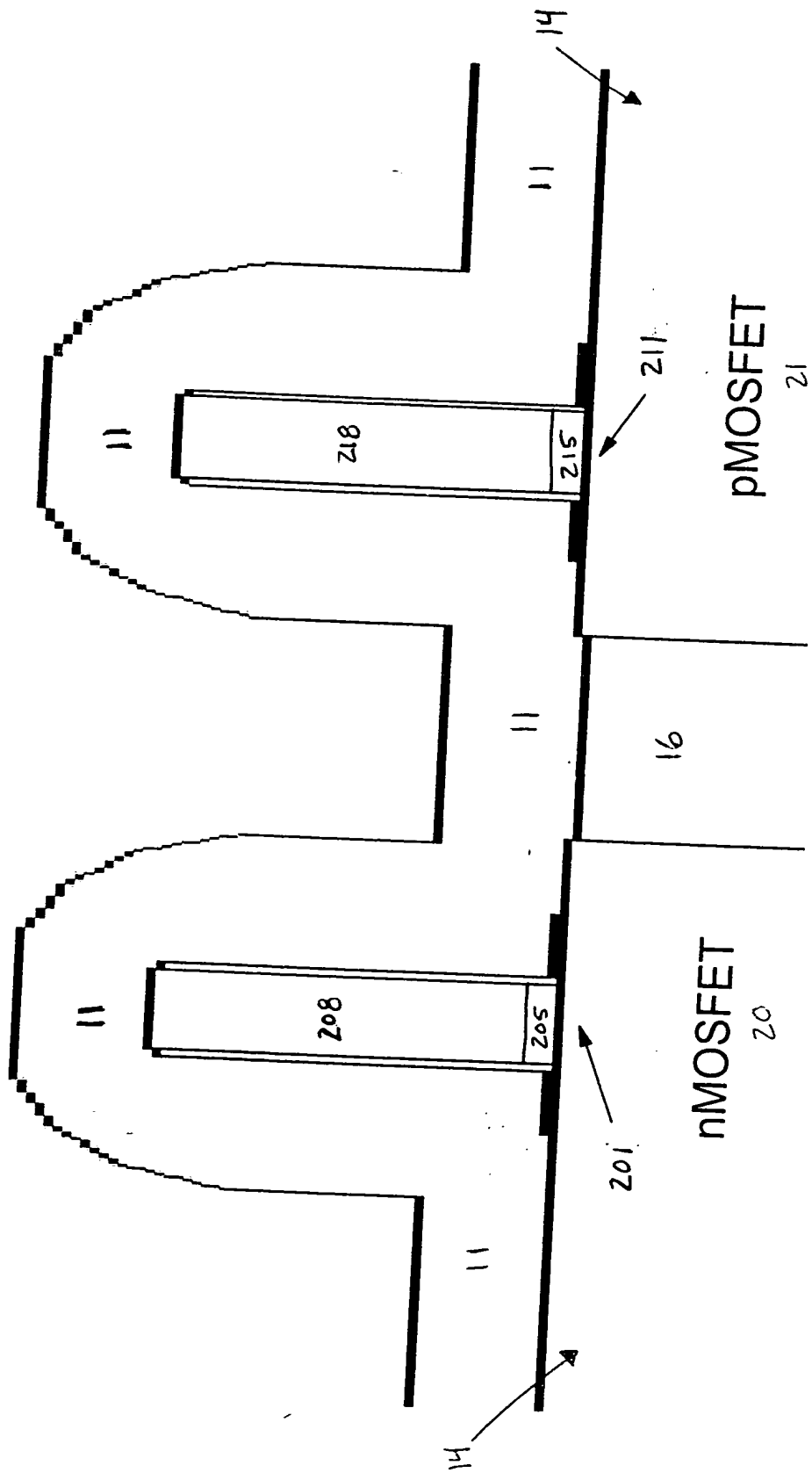


Fig. 2

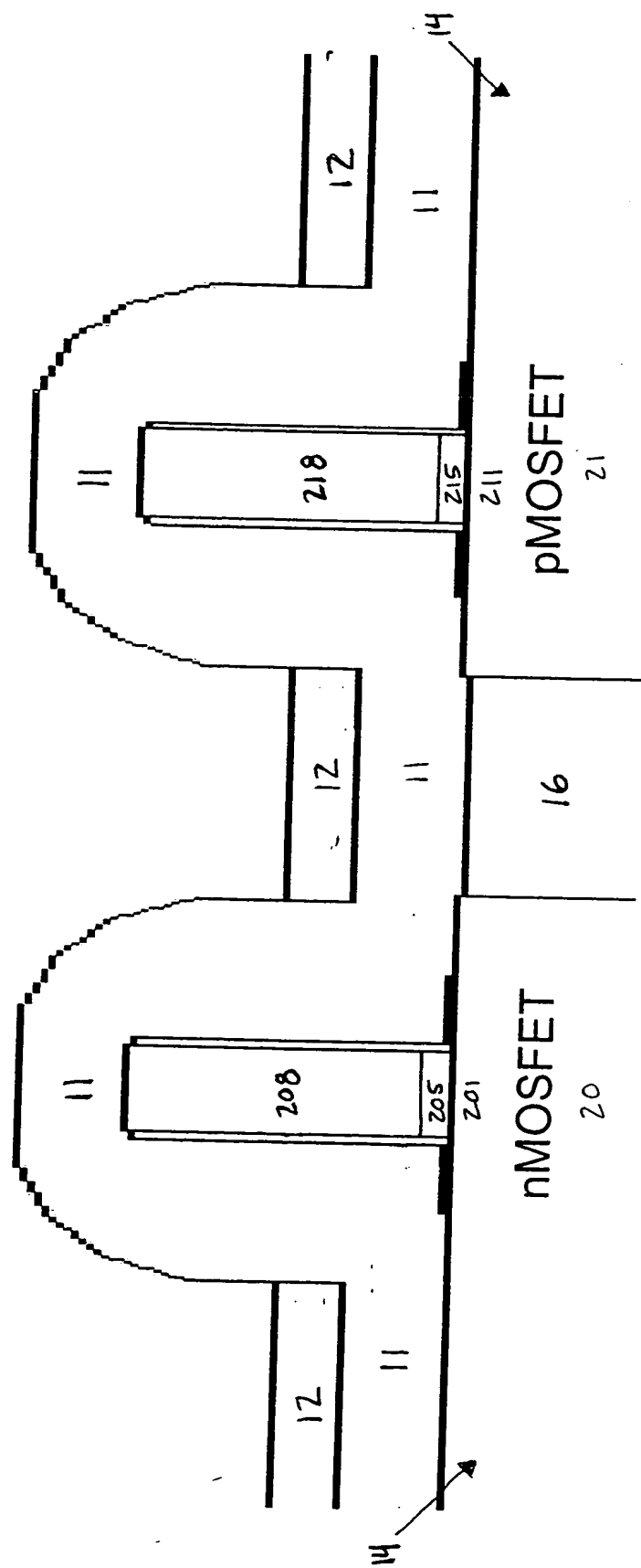


Fig. 3

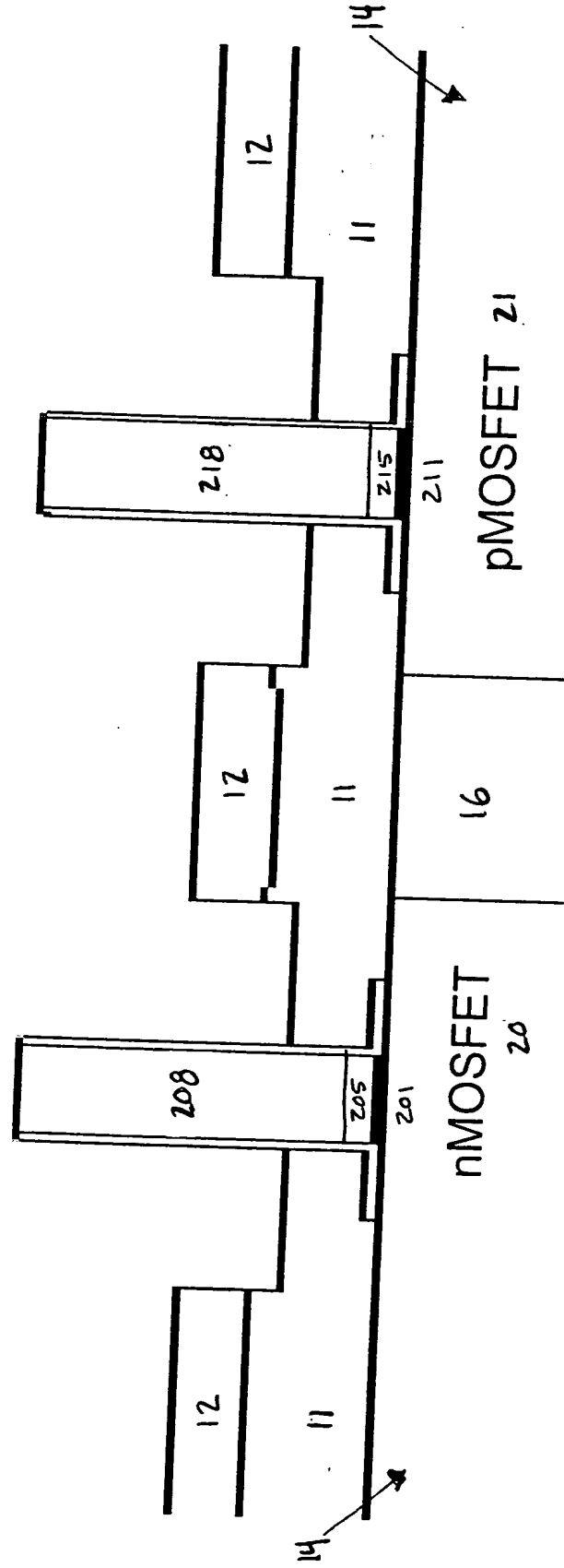


Fig. 4

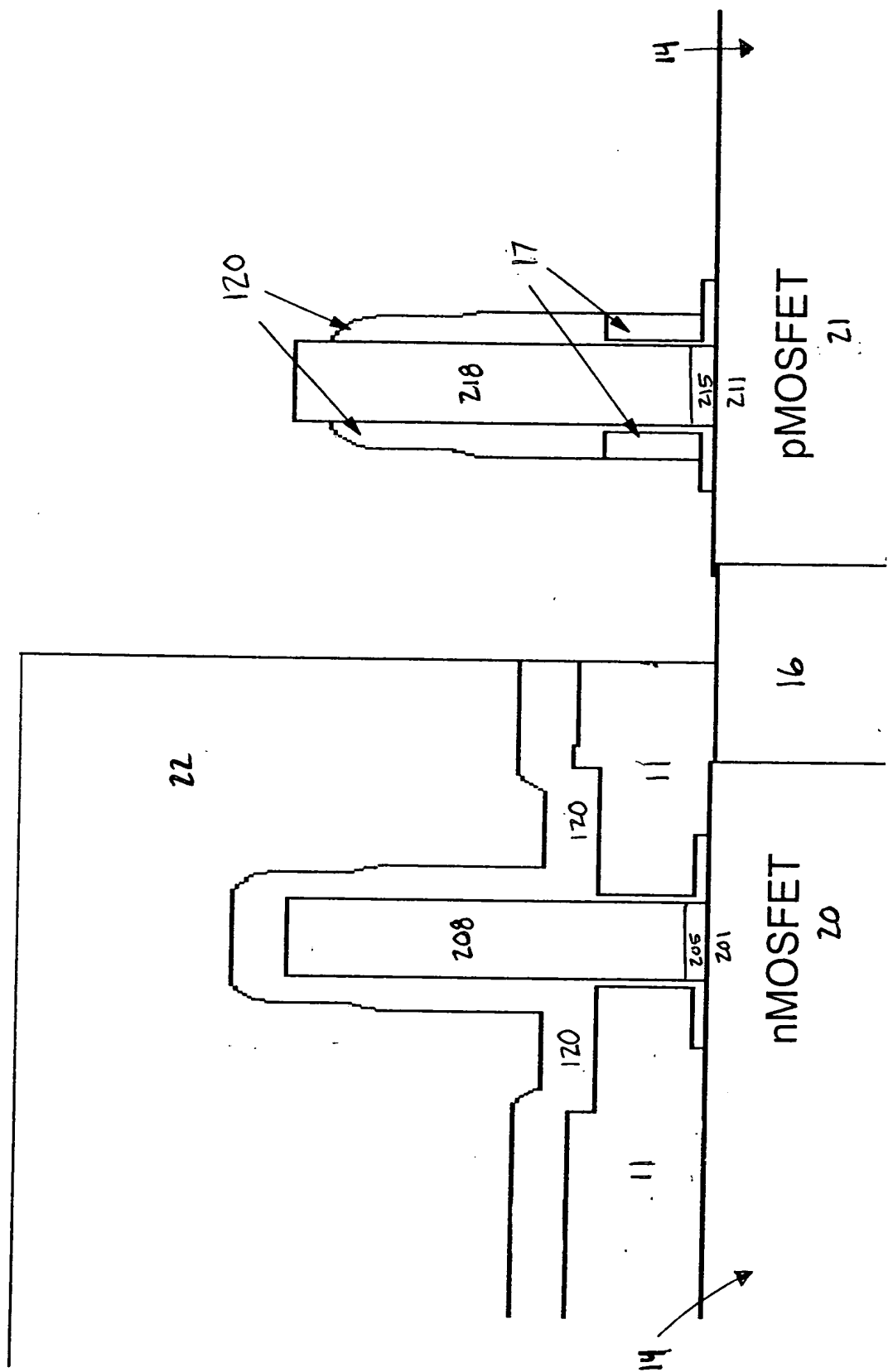


Fig. 5

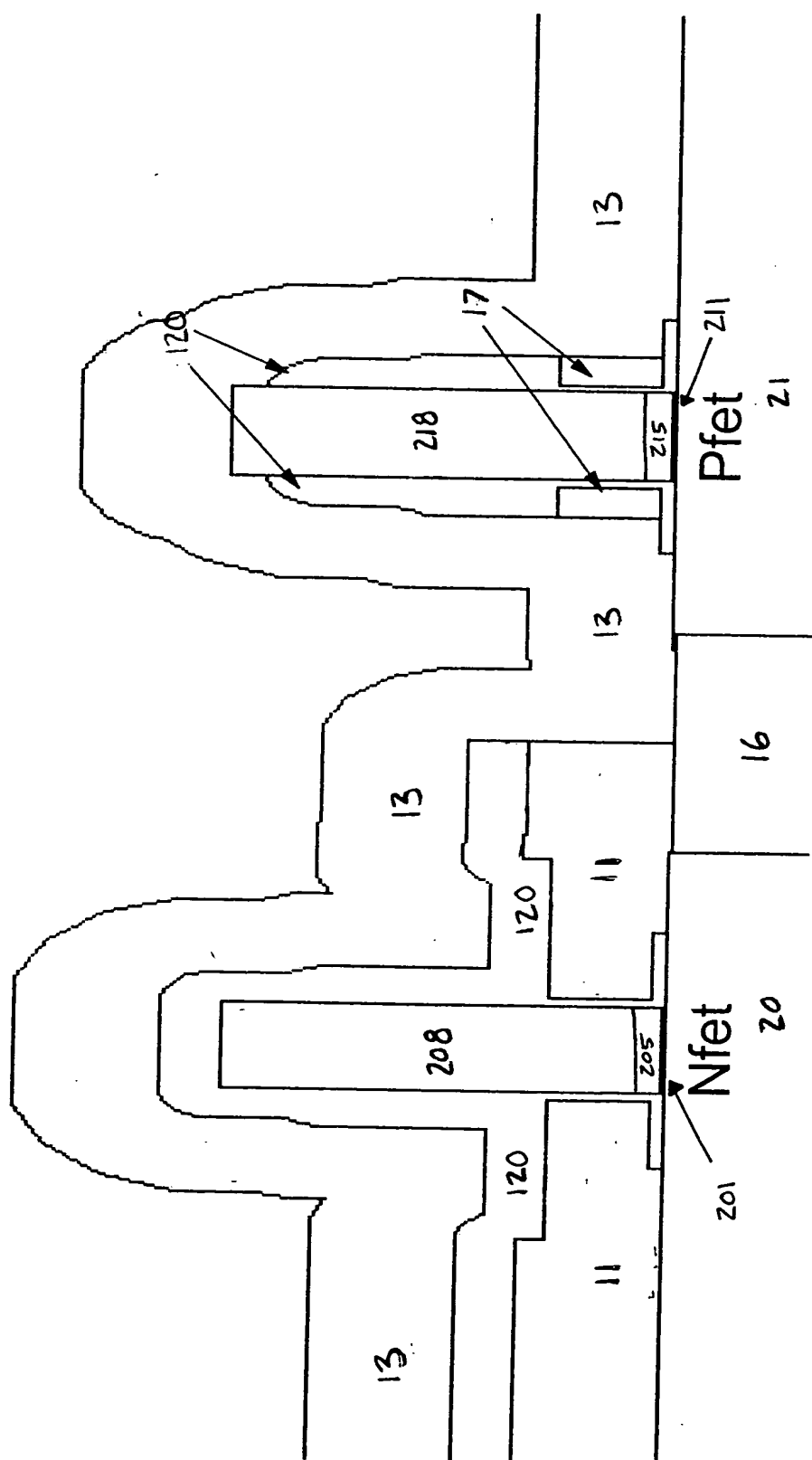


Fig. 6

## Numerical simulation for claimed structure:

### Stress along x-axis/lateral direction, $S_{xx}$ , cut at 5 nm below gate-oxide

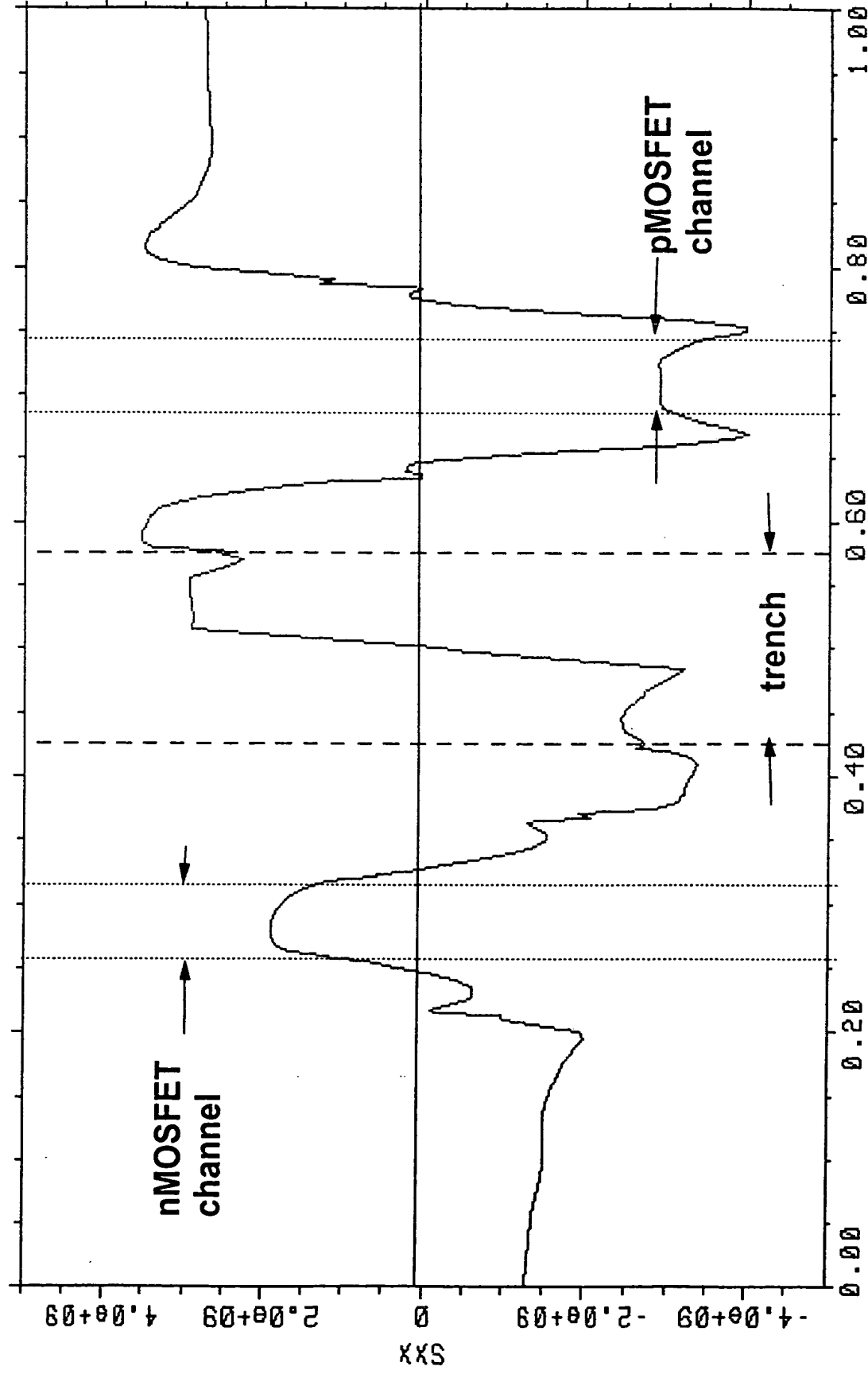
(Thickness of the compressive and tensile nitride films is 50 nm.)

In nMOSFET channel  $S_{xx} = +190\text{MPa}$  and  $S_{xx} = -300\text{MPa}$  in pMOSFET channel.

The intrinsic stress in the tensile and compressive nitride films,  $S_{xx\_intrinsic} = \pm 1.8\text{GPa}$

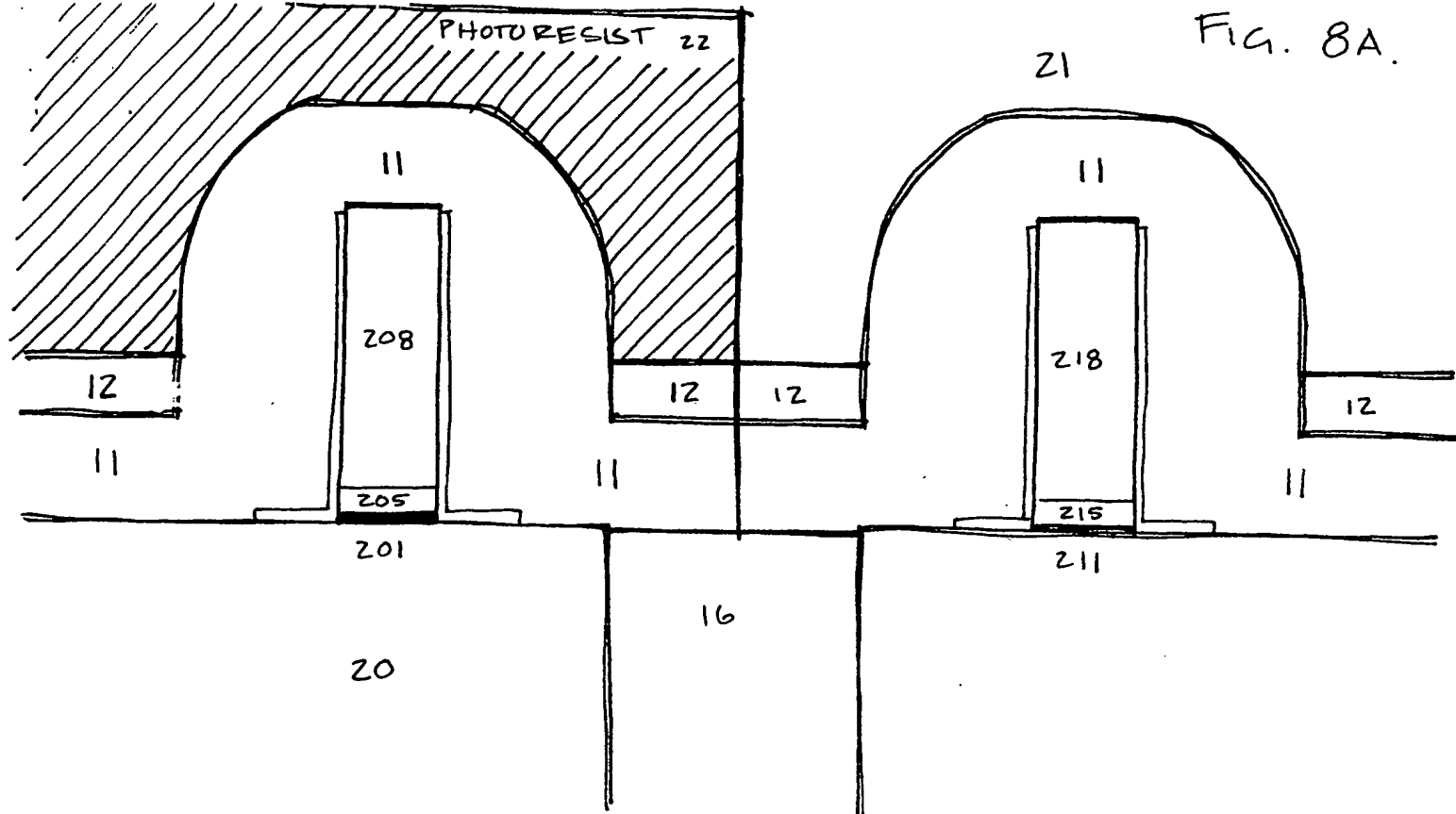
Fig. 7

Stress,  $S_{xx}$ , (dynes/cm<sup>2</sup>)



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FIG. 8A.



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FIG. 8B.

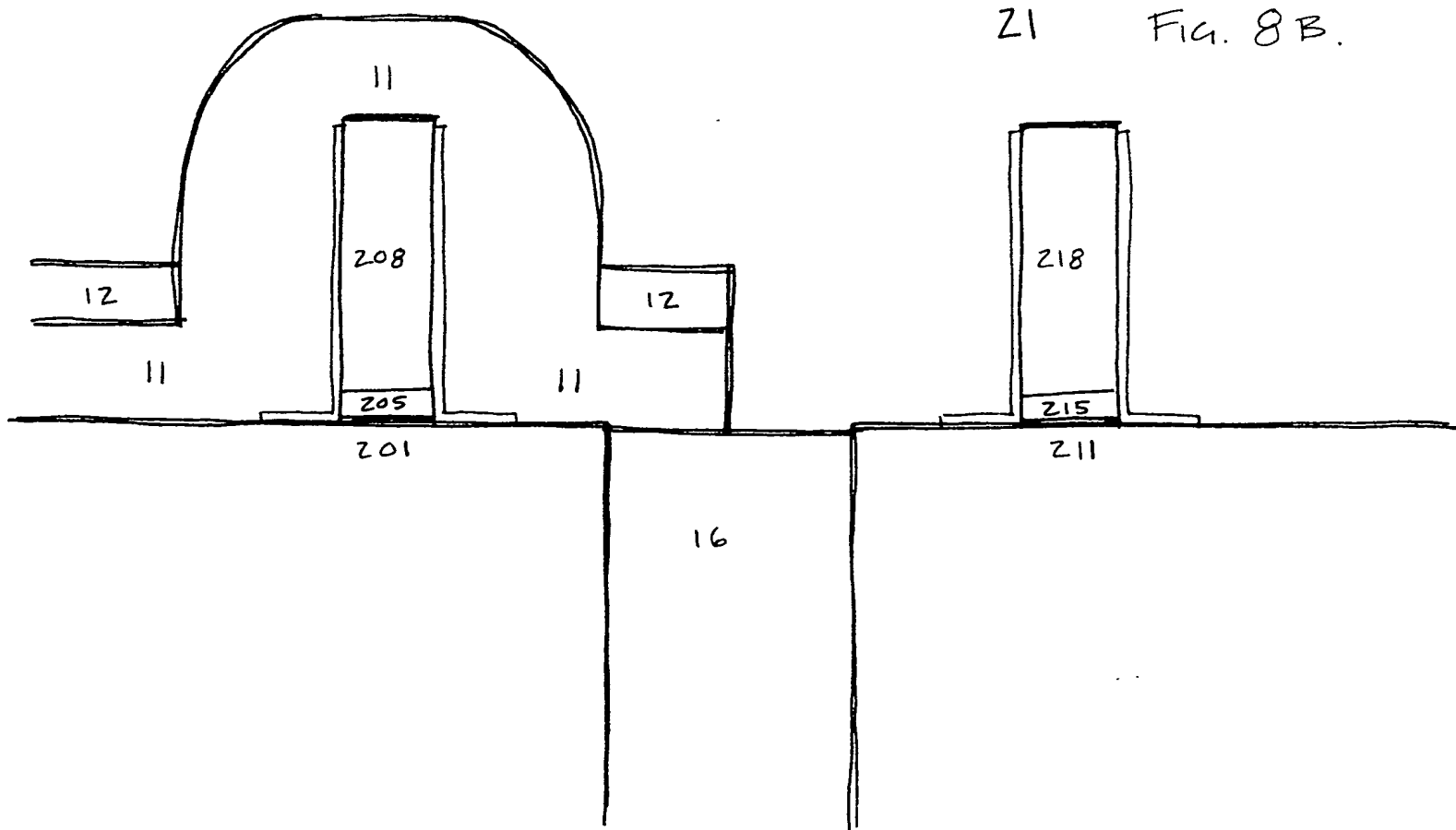




Fig. 8C.

